

City of Wasco General Plan Amendment

**Circulation Element
Noise Element
Seismic Safety/Safety
Element
Scenic Highways Element**

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PREFACE

This General Plan Amendment includes a comprehensive update of the Circulation Element and the Seismic Safety/ Safety, Noise, and Scenic Highway Elements of the Wasco General Plan. They were prepared in compliance with guidelines and regulations established by the Governor's Office of Planning and Research, the Office of Noise Control and the California Division of Mines and Geology. Policies contained in this update should be interpreted as part of the other General Plan Elements of the City of Wasco. Policies contained herein are consistent with policies in other Elements of the General Plan but should not be considered by themselves, outside the entire General Plan context.

CIRCULATION ELEMENT

1.0 Introduction

The purpose of the Circulation Element of the General Plan is to provide guidance, by means of policies, programs and similar tools for the achievement of effective transportation and movement of people and property within the Wasco planning area.

The State-identified purposes of the Circulation Element are to:

- Coordinate the transportation and circulation system with planned land uses;
- Promote the efficient transport of goods and the safe and effective movement of all segments of the population;
- Make efficient use of existing transportation facilities; and,
- Promote and protect environmental quality and the wise and equitable use of economic and natural resources.

The scope of the Circulation Element is defined in Section 65302(b) of the Government Code which specifies, in part, that the Element shall contain:

The general location and extent of existing and proposed major thoroughfares, transportation routes, terminals, and other local public utilities and facilities, and (shall be) correlated with the Land Use Element of the Plan.

The Circulation Element may be more specific than provided for by Section 65302(b); Sections 65303(b), (c) and (d) allow for parking facilities, improvement standards, location of rights-of-way, terminals, viaducts and grade separations to be included in the Circulation Element.

In addition, the Circulation Element must be coordinated with the policies and goals specified in the Noise, Scenic Highway and Safety Elements. This Circulation Element is based on the land use distribution as designated on the land use map of the Land Use Element which was amended in 1977.

2.0 Goals

The following goals have been established for the development and maintenance of the community's circulation system, to meet the community-identified needs:

- Provide a coordinated traffic circulation system for motor vehicles and pedestrians, ensuring safe and efficient access to employment, education, commerce and recreation without significant interference to adjacent land uses.
- Assure adequate access by emergency vehicles to all areas of the community.
- Facilitate and encourage adequate parking throughout the community, including commercial areas.
- Encourage energy efficient and low- or non-pollutant generating modes of transportation and circulation system use.

- Improve existing programs for maintaining and upgrading existing streets and for the construction of street improvements.

3.0 Conditions and Trends

3.1 General

The conditions and trends described herein include an analysis of the existing system of streets and highways, transit needs, railroad operations, bicycle and pedestrian transportation facilities, airports, pipelines and parking. Land use trends and their relationship to circulation system demand are also analysed.

3.2 Existing Street System

The existing network of streets, and the extent to which it is developed, is shown in Figure 1. The street system is composed of a general pattern of State highway arterials, collectors and local streets, each of which provide varying degrees of direct access to abutting property.

Highways. Two State highways, Highway 43 and Highway 46, provide intercity vehicle-trip routes. Highway 43 runs east-west and Highway 46 runs north-south.

Arterials. The primary function of arterials is to provide efficient through- and cross-town traffic. Direct access to abutting property is kept at a minimum, where possible, to maintain the free movement of potentially high traffic volumes on those roadways. A cross section of a typical arterial roadway is shown on Figure 2, Page 5.

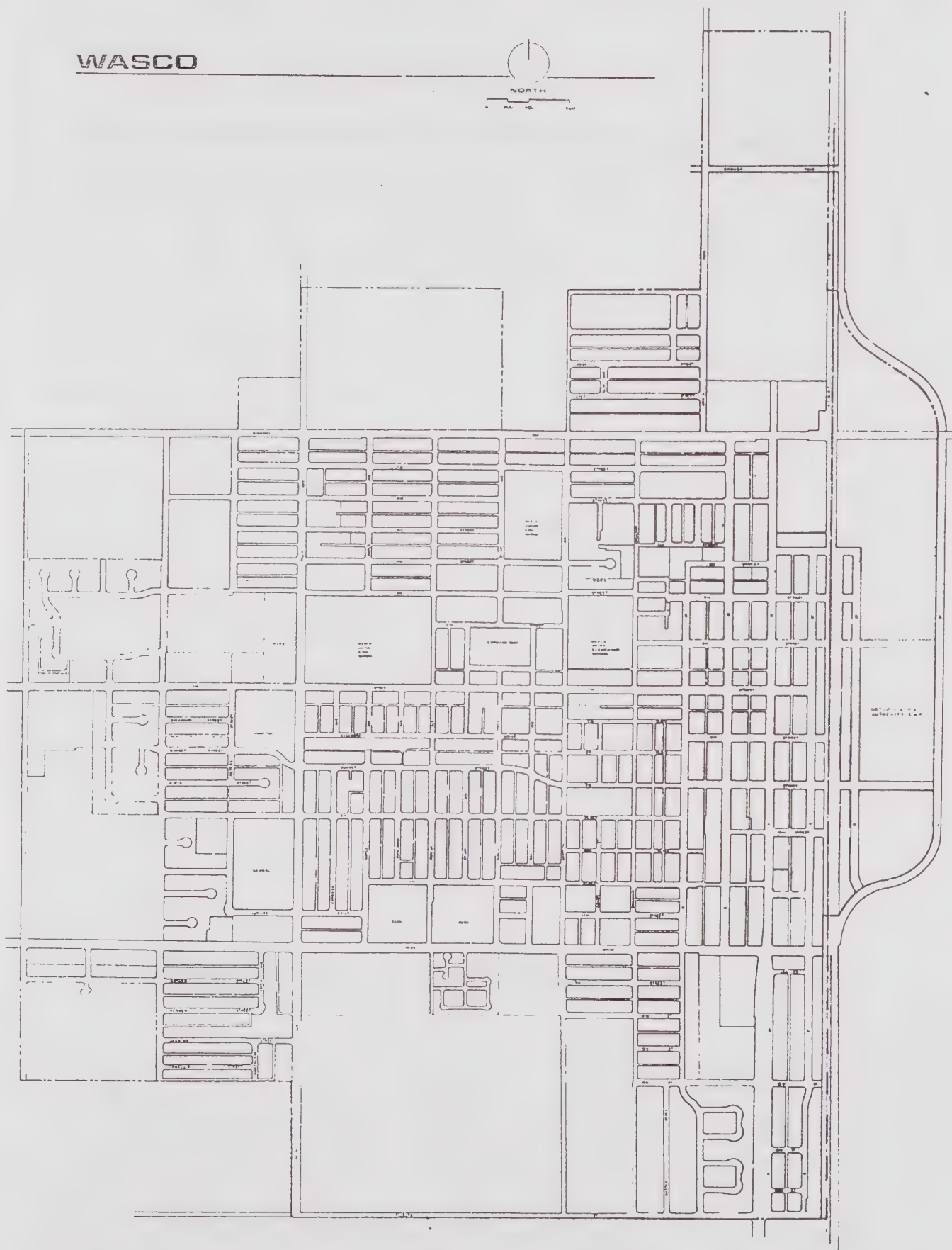
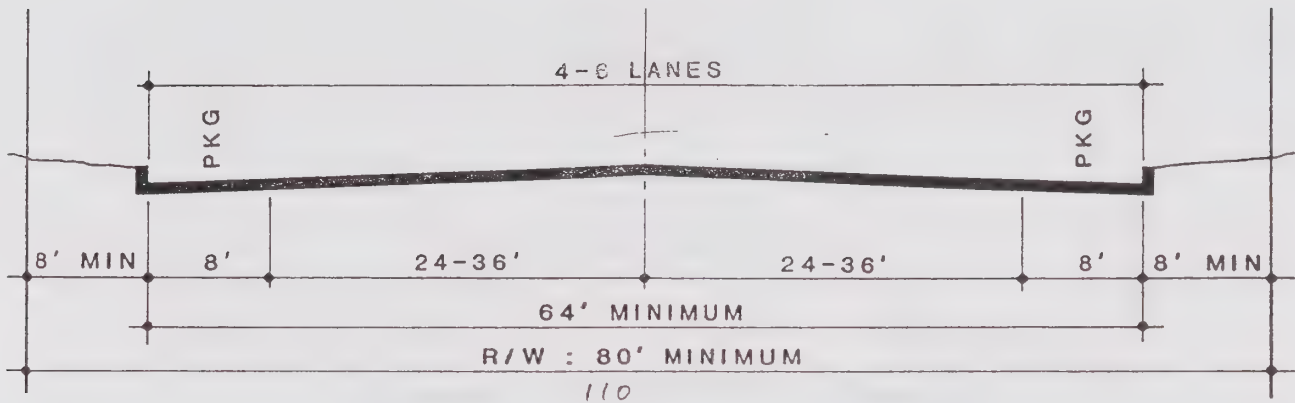
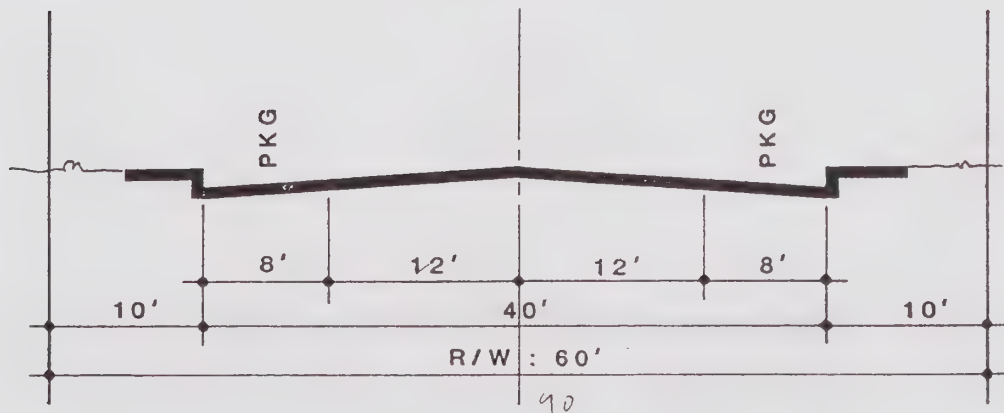


FIGURE 2
ARTERIAL STREET



Collectors. Collector streets provide for traffic movement between arterials and local streets. In practice, though, they carry a large share of the intra-city traffic. They also provide the primary link between different neighborhoods and to the downtown area. In addition, collectors may serve as truck routes, especially for the delivery and pick-up of goods where arterials do not abut the land use. Collectors in Wasco typically have a maximum design capacity of 13,000 ADT. A typical cross-section of a collector is illustrated below.

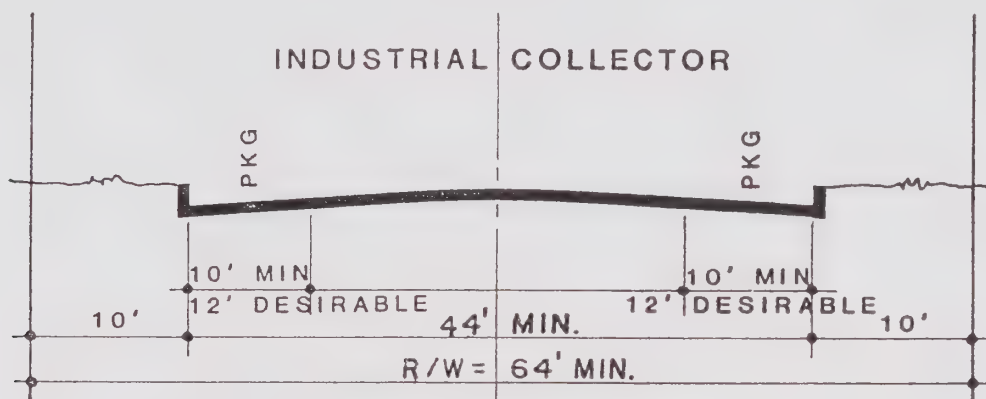
FIGURE 3
COLLECTOR



The City also maintains a special collector street classification for industrial uses. This street type is

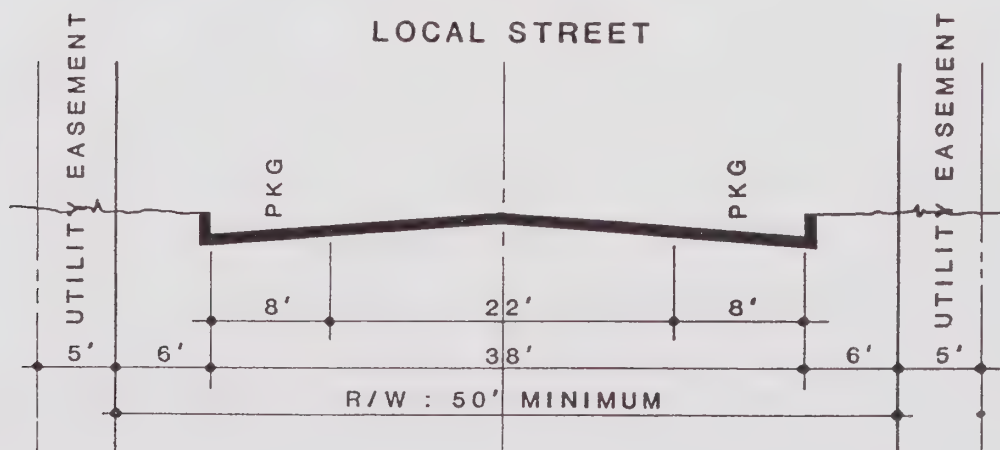
utilized where there will be a disproportionately large volume of large, heavy trucks. Its cross section is shown below.

FIGURE 4



Local Streets. The sole function of local streets is to provide access to abutting land. They are designed to minimize through traffic movements, typically terminating at their intersection with collectors or arterials and frequently curved or terminated in cul-de-sacs. Local streets may have capacities equal to that of minor collectors but are only recommended to have maximum volumes of 1,500 ADT to ensure pedestrian safety. Most traffic volumes are less than 1,000 ADT. A typical local street cross section is shown below.

FIGURE 5



Accidents. One of the most important indicators of the efficiency of the street network system is the incidence of accidents. Figure 6 shows the location of all accidents in 198~~0~~⁷. It shows that accidents were concentrated in the downtown area and at the intersection of major arterials, especially on the periphery of the developed portion of the community.

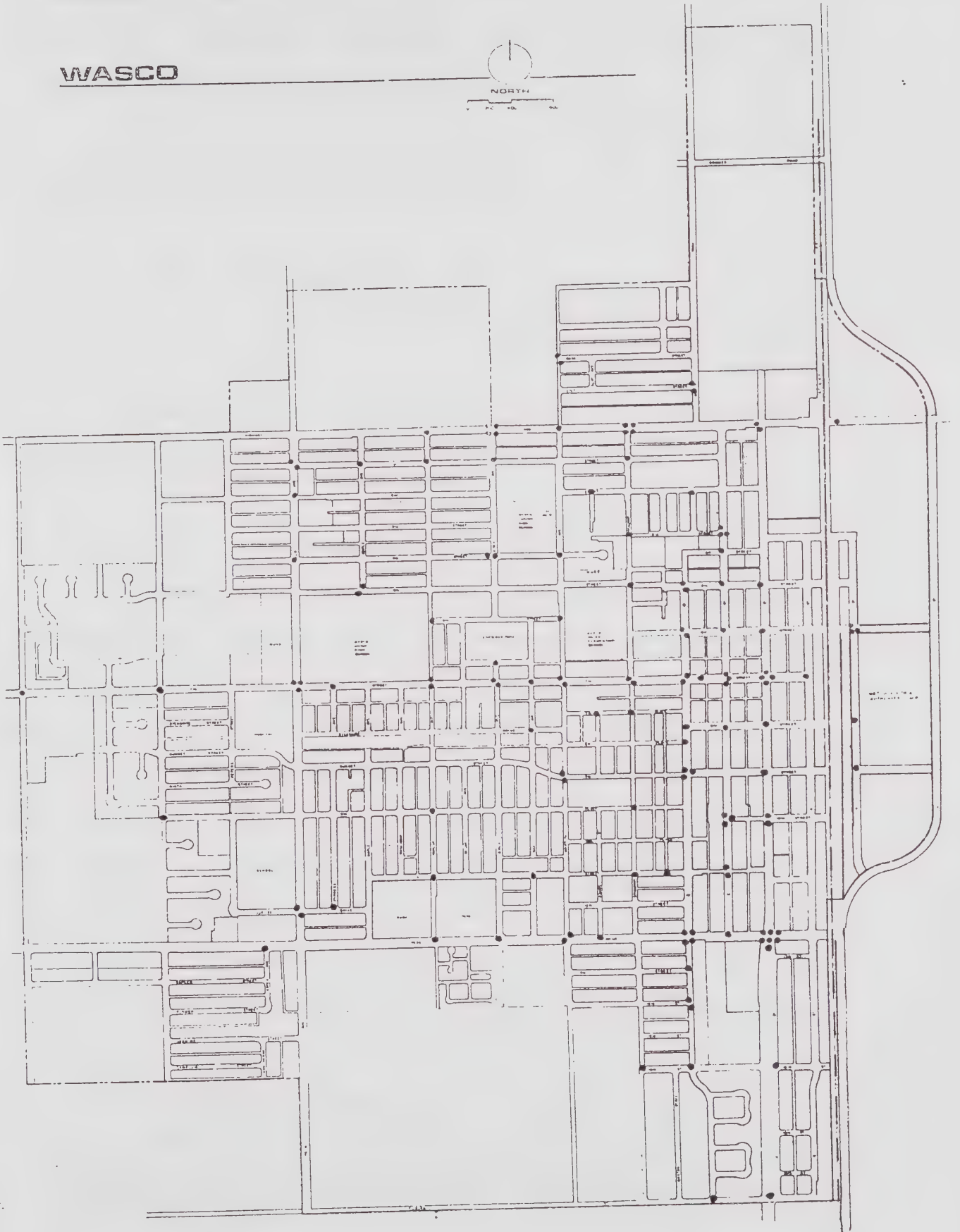
3.3 Transit and Rapid Transit.

According to a recently prepared analysis of the number of "mobility-limited" persons in the Wasco area by the Kern County Association of Governments (KernCOG), approximately 500 persons in the community are considered mobility-limited, five percent of the City's population. These persons are estimated to generate a "need" for 12 intercity person trips per day to Bakersfield.

Intra-city transit is provided by the City of Wasco Dial-a-Ride system. The Dial-a-Ride van operates from 8:00 a.m. to 5:00 p.m. on all working days. During the Fiscal Year 1980-1981, the system served an average of 75 persons daily. The Dial-a-Ride van serves all segments of the population, including the developmentally disabled and the mobility limited.

The Wasco Recreation and Parks District operates a station wagon for the senior citizens lunch program. The

WASCO



vehicle will provide transportation or deliver meals. The vehicle serves an average of 15 persons per day.

Inter-city transit service is provided by Orange Belt Stage Lines, a private common-carrier.

3.4 Railroad

The Atchison, Topeka and Santa Fe Railroad Company operates a rail line through Wasco which parallels Highway 43. The track currently carries freight, as well as passenger rail traffic provided by Amtrak's San Joaquin Valley line.

3.5 Pedestrian Facilities

Pedestrian traffic is provided for by a system of sidewalks abutting streets. The sidewalks are protected by barrier-type concrete curbs and gutters. The number of pedestrian-related accidents reported to the California Statewide Integrated Traffic Reporting System (SWITRS) in 1980 indicates that three pedestrian related accidents occurred. This statistic indicates a relatively safe pedestrian circulation system. Curb and gutter is over 99 percent completed. However, sidewalks are only partially completed, resulting in potential safety hazards and inconvenience for pedestrians.

3.6 Bicycle Facilities

Under present conditions, bicycle transportation is provided by the total street system. According to SWITRS,

there were no bicycle-related accidents in 1980. This indicates a very safe bicycle circulation system.

3.7 Airports

Kern County operates the County Airport No. 5 which is just northwest of the McCombs/Palm Avenue intersection. The airport provides limited general aviation and agricultural aircraft support facilities. The nearest commercial airport is Meadows Field in Bakersfield, which provides intrastate commuter flights and connecting flights to international airports.

3.8 Pipeline and Conduits

There are no known major natural gas or electrical trunk facilities in the Wasco Urban Area.

3.9 Parking

Parking is accommodated by off-street spaces provided by private commercial, residential and industrial land uses. Public parking is provided by on-street spaces in the downtown and at several municipal parking lots.

The demand for parking for individual land uses is dependent on the traffic generated by each land use and seasonal variations in land use activity.

3.10 Land Use Trends

The location and distribution of arterials, collec-

tors and local streets is dependent on the location and traffic generation of different land uses in the urban area. Each type of land use generates a different quantity of traffic trips per acre; therefore, assignment of the appropriate frequency -- one-half mile, one-quarter mile, etc. -- of each functional roadway classification to an area depends on the traffic generation characteristics of each area. Figure 7 shows the land use distribution designated in the Land Use Element of the General Plan. Table 1 shows the recommended arterial and collector grid frequency rates for various types of land uses in the City of Wasco.

RESIDENTIAL

Single Family

Multi-Family

COMMERCIAL

INDUSTRIAL

OPEN SPACE/RECREATION

PUBLIC/QUASI-PUBLIC

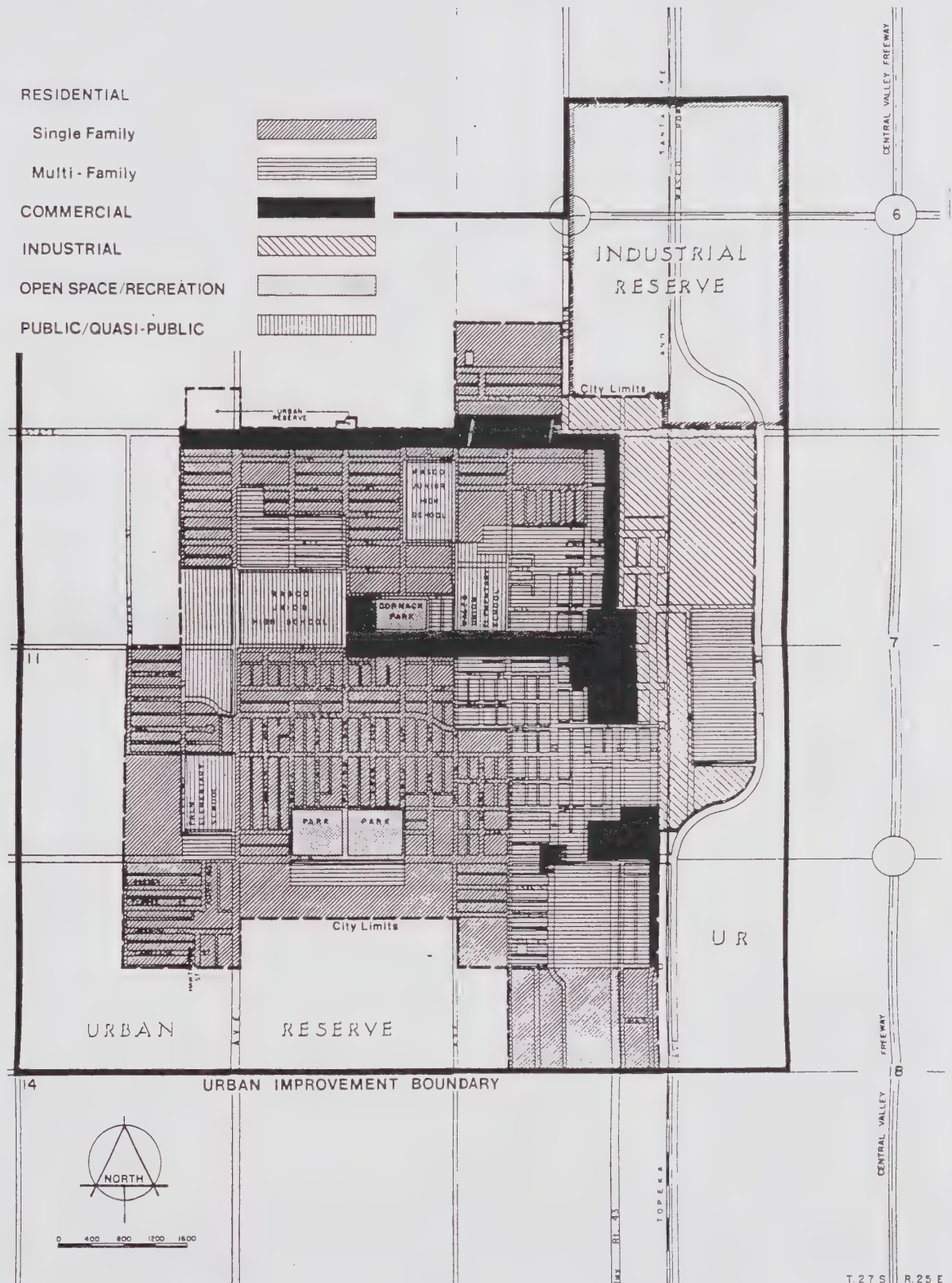


TABLE 1
City of Wasco
TRAFFIC GENERATION AND GRID FREQUENCY
BY LAND USE

<u>Type of Land Use</u>	<u>ADT per acre</u>	<u>Arterial grid frequency (miles)</u>	<u>Collector grid frequency (miles)</u>
Single-family resi- dential (0-11 per acre)	60	one	one-half
Multiple-family resi- dential (11 or more per acre)	150	one	one-quarter
Commercial	1200	one-quarter	one-eighth
Industrial (light)	50	one	one-half
Public Facilities			
City park	60	one	one-half
High school	200	one-half	one-quarter
Elementary school	90	one	one-half
Civic center	450	one-half	one-quarter

Source: QUAD Consultants, 1982.

Institute of Transportation Engineers. 1978. Trans-
portation and Traffic Engineering Handbook.

4.0 Policies

Figure 8 graphically shows the street network circulation plan and functional street classification for the Wasco urban area. The following policies are adopted to guide the development of the circulation system.

4.1 Street System

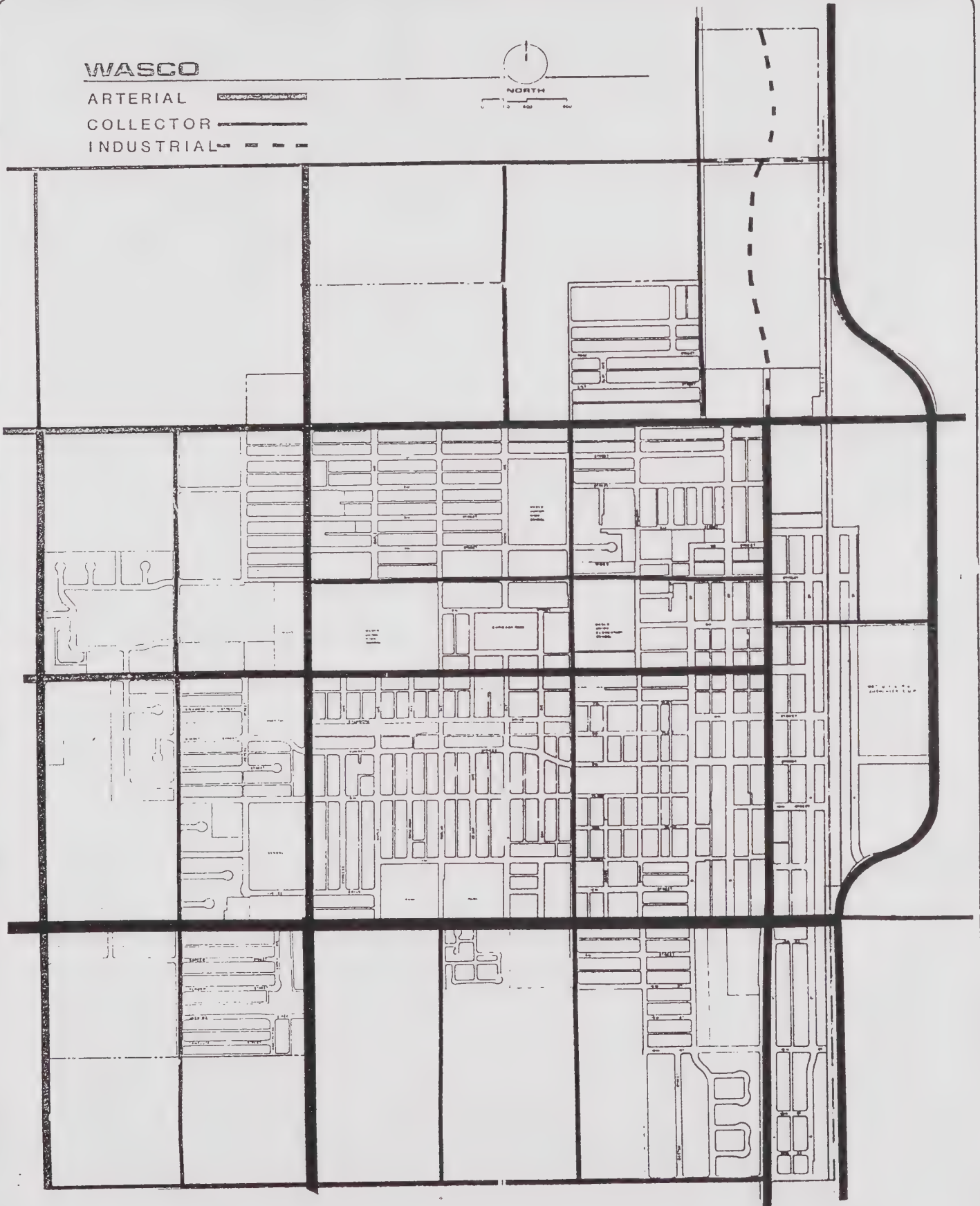
- Continue street maintenance, upgrading and construction programs.
 - The right-of-way for the circulation system shall be developed and dedicated to the appropriate extent and width in undeveloped areas when development or division of property occurs.
 - Street widening and right-of-way acquisition in existing developed areas should be undertaken when required for obvious safety reasons, such as trends toward higher accident rates or drop in the overall level of service.
 - Established truck routes as designated on Figure 9 shall be maintained. No new truck routes shall be allowed.
 - Collector streets should provide access to traffic generating land uses such as schools, hospitals and recreation areas, but should not extend the entire length of the City in such a manner that would encourage use by through-and cross-town traffic.
- To serve the designated industrial properties north of Highway 46, priority should be given to the extension

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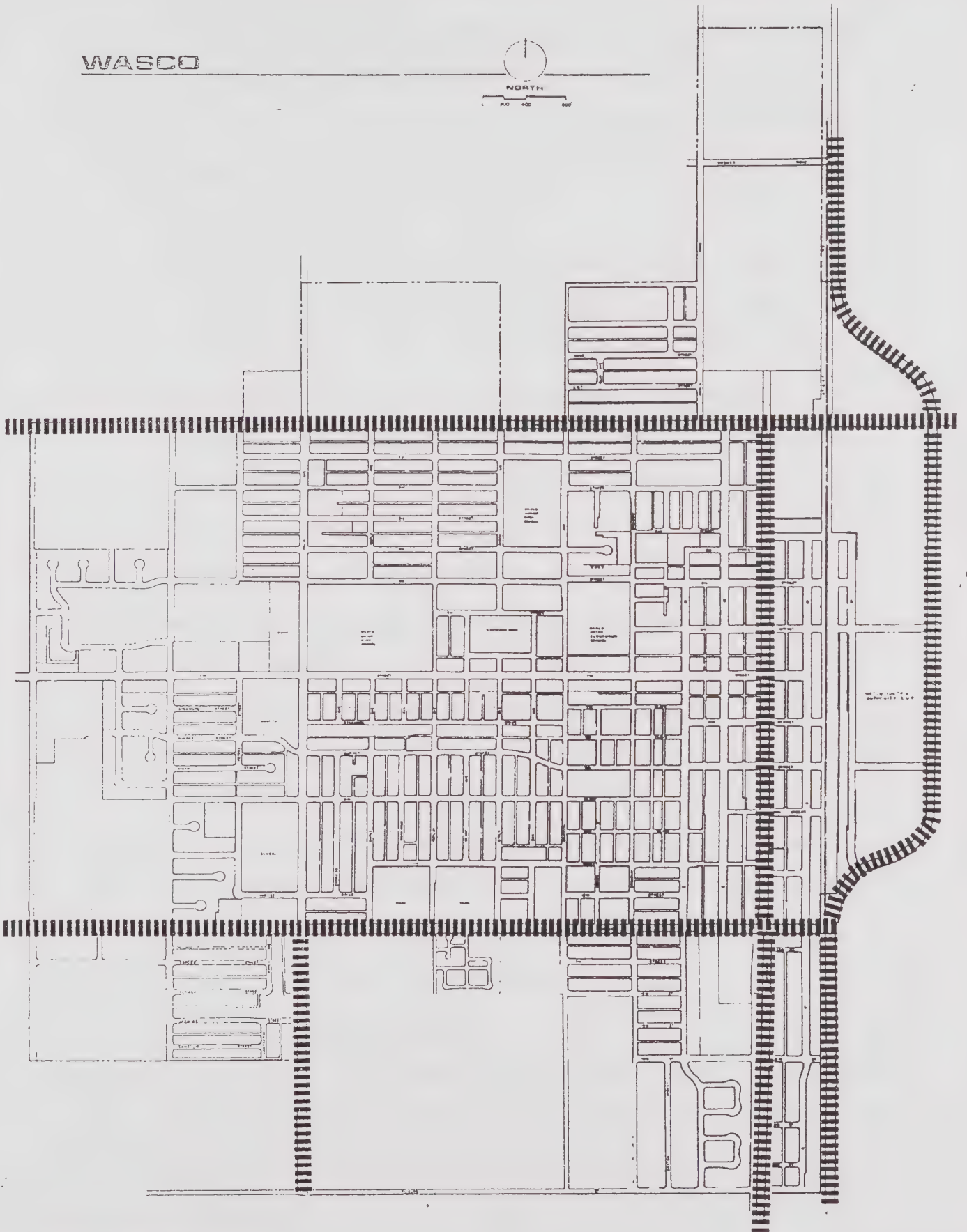
ARTERIAL

COLLECTOR

INDUSTRIAL



WASCO



and improvement of Gromer Road to J Street. If an at-grade railroad crossing is not possible to achieve the extension of Gromer Road, F Street shall be extended from its existing alignment north of Highway 46.

- Arterials should be designed to provide cross-town, through-town and inter-city traffic. Access to abutting land uses should be limited, where possible, to facilitate traffic flow and reduce potential traffic conflicts and hazards. They should not be located adjacent to sensitive land uses or bisect neighborhoods.
- Local streets should be designed to limit high-speed and through traffic.

4.2 Transit

- It is the policy of the City to encourage cost-effective, non-polluting forms of transportation such as bus and rail transit.
- It is the policy of the City to endeavor to meet the needs of the mobility limited population and to encourage, in general, rapid transit and para-transit in the City of Wasco.

4.3 Railroad Operations

- The City shall attempt to preserve the current status of the existing rail system, including the provision of passenger rail service.

4.4 Bicycle and Pedestrian Traffic

- o Sidewalks shall be provided in commercial and residential areas to facilitate pedestrian traffic.
- o In existing developed areas where sidewalks do not exist, the City shall continue to support existing programs and pursue new programs for sidewalk construction. Bicycle accidents will continue to be monitored. At such time as population merits designation of bicycle paths, the City shall establish such.

NOISE ELEMENT

1.0 Introduction

The purpose of this Noise Element is to identify the location and relative intensity of noise in the environment and to identify land use policies and other controls to restrict the exposure of sensitive persons and land uses to excessive levels of ambient noise. Monitoring and control of noise becomes increasingly important as a community grows and urbanizes. As areas urbanize over time, noise impacts generally increase due to the increase in vehicular traffic, industrial operations and higher population densities; as cities reach suburban densities (4,000 persons per square mile) their respective noise environments change from quiet, rural settings to ones which are characterized by intermittent noise intrusions and higher ambient levels of noise.

Two types of noise exist: ambient noise and intrusive noise. Ambient noise is "background noise," usually caused by traffic or other continuous noise sources. Intrusive noise is a sudden increase, of at least 5 dB(A), in the ambient noise level. Ambient noise up to 65 dB(A) is generally considered non-detrimental. Intrusive noise, however, may be detrimental at lower noise levels if it substantially exceeds the ambient noise level of a given area. Thus, the presence of short-term intrusive noise such as that created by trains or aircraft may

be just as detrimental as moderate or high levels of ambient noise. The data and statistics in this Element focus primarily on ambient noise level in the community; however, both ambient and intrusive noise are examined, and appropriate policies are specified for the control of both.

The intrusion of high levels of noise has been shown by many researchers to cause emotional as well as physical problems such as stress, annoyance, sleep disturbance and physical discomfort. Consequently, to ensure a minimal level of exposure of sensitive persons and land uses to excessive noise, policies and programs have been included in this Element to eliminate, to the fullest extent possible, the exposure of such uses to excessive levels of noise.

The Noise Element is also used to determine compliance of new developments with Section 1092, Title 25 of the California Administrative Code regarding noise insulation standards for new multiple-family dwellings (see Appendix A). This section of the Administrative Code specifies noise insulation standards for multiple-family dwellings which are exposed to levels of noise in excess of 60 Ldn. (Ldn is a weighted average of day and night noise measurements.)

1.1 Scope of Study

The needed scope of a Noise Element is not specifically defined in the Government Code. However, it does indicate that the Element must be at least specific and comprehensive enough to determine the existing and future impact of highways and freeways, primary arterial roadways, railways and rail operations, aviation operations, local industrial plants and other stationary sources on sensitive land uses such as schools, hospitals, rest homes, medical and mental care facilities, libraries and churches. Also, the Noise Element must determine the number of existing and future persons exposed to day-night (Ldn) average noise levels in excess of 60 dB(A). (dB(A) is the number of decibels recorded using the A-weighted sound measurement network.)

1.2 Study Process

The Noise Element follows the format recommended by the Office of Noise Control. The guidelines promulgated by that agency indicate a three-phase process involving analysis of existing levels of ambient noise, development of goals, objectives and policies regarding the mitigation of noise impacts, and specification of mitigation measures, including land use policies, noise control ordinances and other regulatory tools.

The survey of existing levels of noise in Wasco includes an analysis of existing noise complaints and their source, noise generation, identification of sensitive receptors

and noise-level monitoring at the location of such receptors. Much of the data contained in this Element are based on the Noise Report: Noise Ordinance Background Data report prepared in September of 1980.

2.0 Goals

The following goals are identified for the purpose of guiding the Noise Element:

- Limit exposure of noise-sensitive persons and land uses to adverse noise impacts;
- Enhance the quality of the noise environment.

3.0 Conditions and Trends

The analysis of the existing noise environment includes a survey of noise complaints received by the City, a detailed survey of noise generators in the community, a survey of sensitive receptors and the ambient noise levels monitored at their locations, a composite noise contour map and an estimate of the current number of persons exposed to ambient noise levels in excess of 60 dB(A).

3.1 Noise Complaints

The Wasco City Police Department was contacted to ascertain the number and type of noise complaints received by the City. The Department reported that other than the

occasional "barking dog" complaints, no known complaints have been reported to the Department.

3.2 Noise Generation.

Highways and Freeways. The City is bordered to the north and east by state Highways 46 and 43, respectively. According to Caltran's data, Highway 46 carries approximately 6800 Average Daily Vehicle Trips (ADT) and Highway 43 carries approximately 6100 ADT.

Highway 43 provides south-north intercity connections to Shafter and Bakersfield and Highway 46 provides east-west connections to State Highway 99 and Interstate Highway 5, which are the major north-south freeways in the San Joaquin Valley. Caltrans projects a two percent annual growth rate in the number of vehicles carried by these highways each year.

Primary Arterials. In addition to the State Highways in the Planning Area, which often function as arterials within the City limits, 7th Avenue, Poso Avenue and Palm Street serve as primary arterials in the City. These arterials are supported by a system of collector streets spaced at approximately one-quarter to one-mile intervals. (See Figure 10.)

Railroad Operations. The ATS&F operates a rail line in the Planning Area, which runs parallel to and east of Highway 43. Two daily passenger trains, operated by Amtrak, use the track each day, as well as daily freight trains.

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ARTERIAL

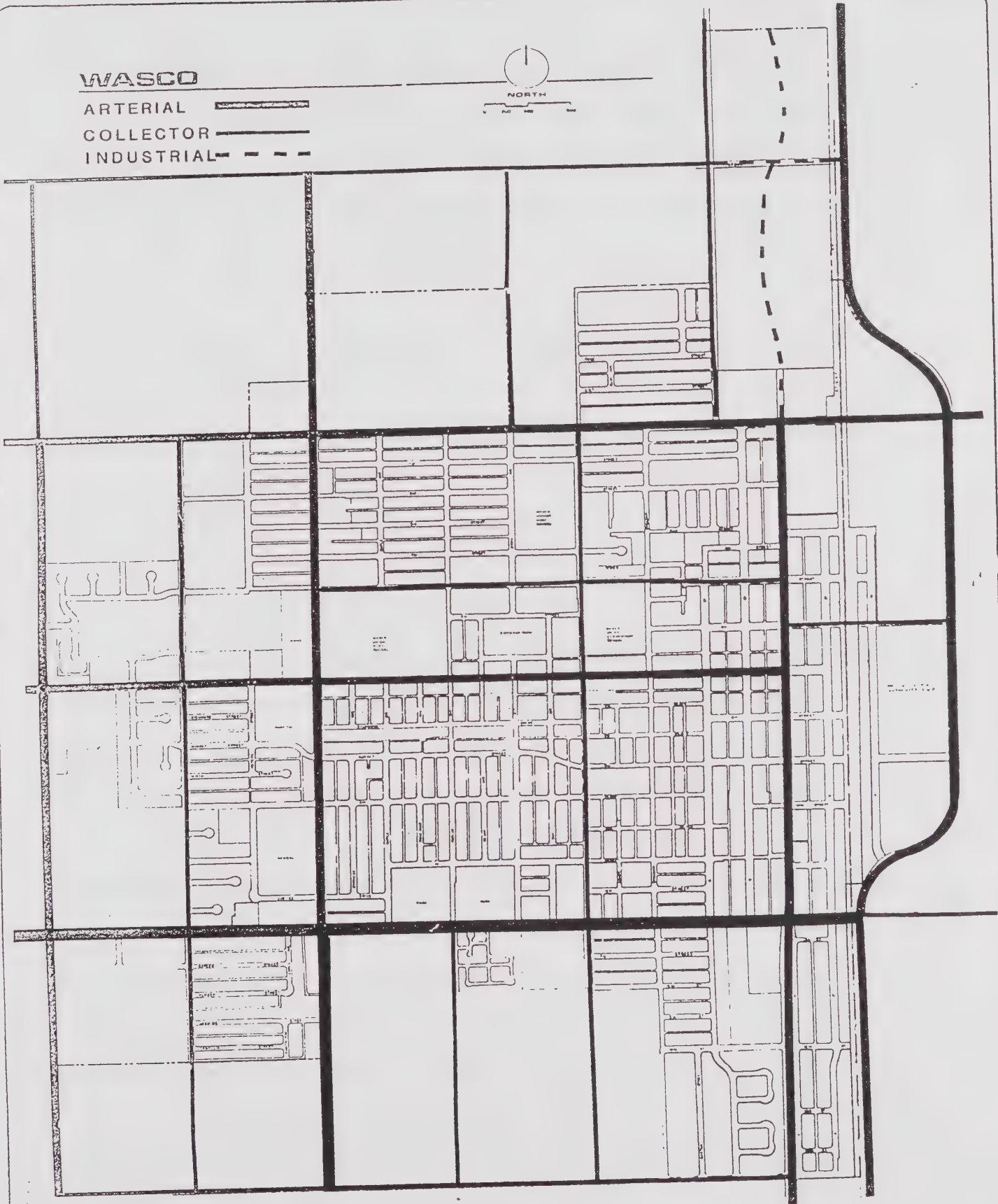
COLLECTOR

INDUSTRIAL



NORTH

0 100 200 300



Aviation. Kern County Airport No. 5 is located north of the Planning Area, northwest of the McCombs-Palm intersection. According to noise level projections by the Kern County Health Department, the 65 dB(A) noise contours resulting from airport operations do not extend into the Wasco Planning Area.

Industrial Operations. Industrial operations and land uses are concentrated along both sides of the railroad between Highway 46 and Poso Avenue. With the exception of rail freight pick-up and deliveries, such uses are not significant sources of ambient or intrusive noise.

3.3 Sensitive Receptors

Section 65302(g) of the Government Code specifically requires that the noise environment of sensitive receptors such as schools, hospitals, rest homes, long-term medical or mental care facilities, or any other land use deemed noise-sensitive by the local jurisdiction, be determined by monitoring. Ten sites were determined to be "noise sensitive." In addition to these ten sites, six sites were monitored to reliably determine the composite noise contours in the community. The sixteen sites and their respective day-night noise level (Ldn) are shown on Table 2; Figure 11 shows their respective locations.

Composite Noise Contours. Based on the noise levels monitored at the sixteen sites, existing noise level contours

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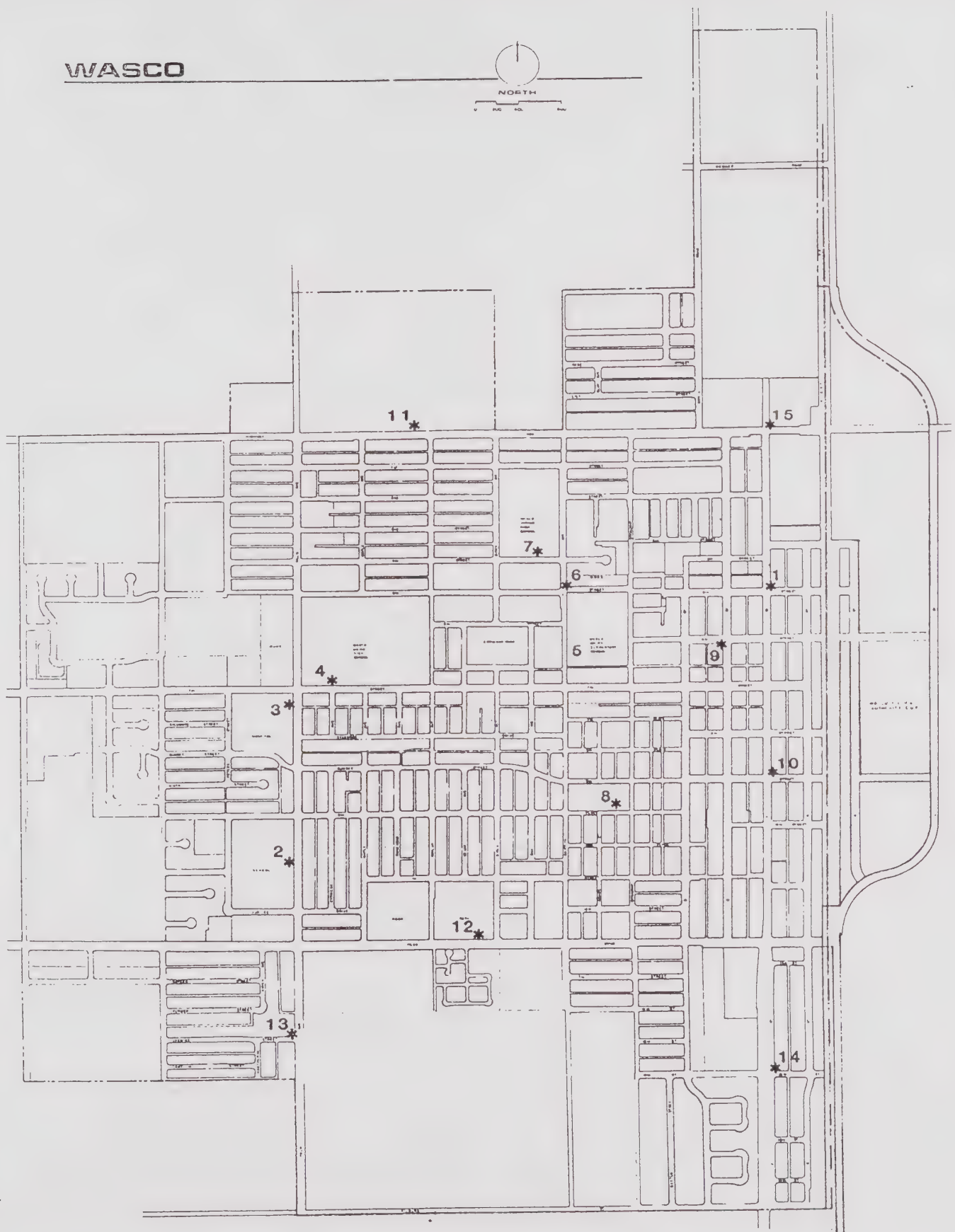
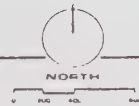


TABLE 2
City of Wasco
NOISE MEASUREMENT LOCATIONS

<u>Site No.</u>	<u>Location Intersection</u>	<u>Ldn</u>
	<u>Sensitive Receptors</u>	
1	New Life Rest Home	64
2	Palm Elementary School	59
3	North Kern Hospital	62
4	Wasco Union High School	62
5	Clemens Elementary School	56
6	Kindergarten/Cerebral Palsey School	55
7	Jefferson Junior High School	58
8	St. Johns School	55
9	Wasco Association for Developmentally Disabled	58
10	Day Care Center	66
	<u>Other Sites</u>	
11	Highway 46 & Maple	68
12	Poplar & Poso Drive	66
13	Palm & Jasmine	62
14	Highway 43 & 16th Street	65
15	Highway 46 & Highway 43	69
16	9th Place & Cedar	57

Source: QUAD Consultants, 1982
Charles M. Salter, Associates, 1980

were determined. These contours are shown on Figure 12. Future noise level contours were determined based on the population related increase in traffic on the local primary arterials of Poso, Palm and Seventh Streets and Caltrans' estimate of probable annual increases in the volume of traffic on Highways 43 and 46. The projected noise contours for the year 2000 are shown in Figure 13.

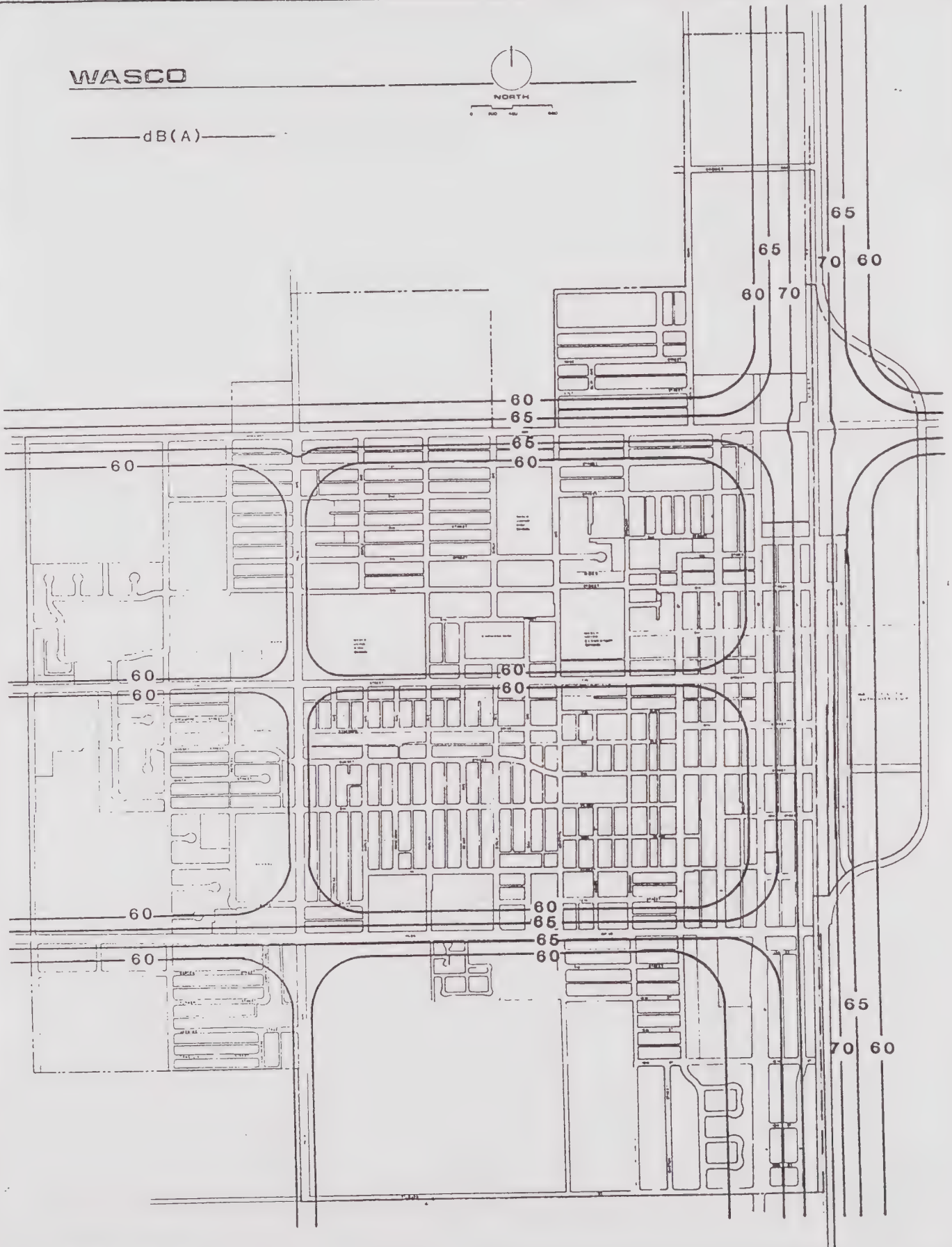
Noise Exposure Survey. State guidelines require that the existing and future projected number of persons exposed to noise levels in excess of 60 dB(A) be determined. The existing number of persons exposed to such noise was determined by the number of residential units within the statistically determined composite noise contours multiplied times the current number of persons per dwelling unit.

The projected future number of persons exposed to noise levels above 60 dB(A) was based on three factors: (1) the projected year 2000 noise contours; (2) the number of existing residential units within the projected noise contours; and (3) the potential number of new residential units built on vacant residentially zoned land within the projected contours. It should be noted that the estimated number of persons exposed due to new development assumes no mitigation measures such as masonry walls, fences, structural sound insulation or the like, and such projections are, therefore, absolute maximum counts. The existing and projected number of persons exposed to levels above 60 dB(A) is shown on Table 3.

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— dB(A) —



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—dB(A)—

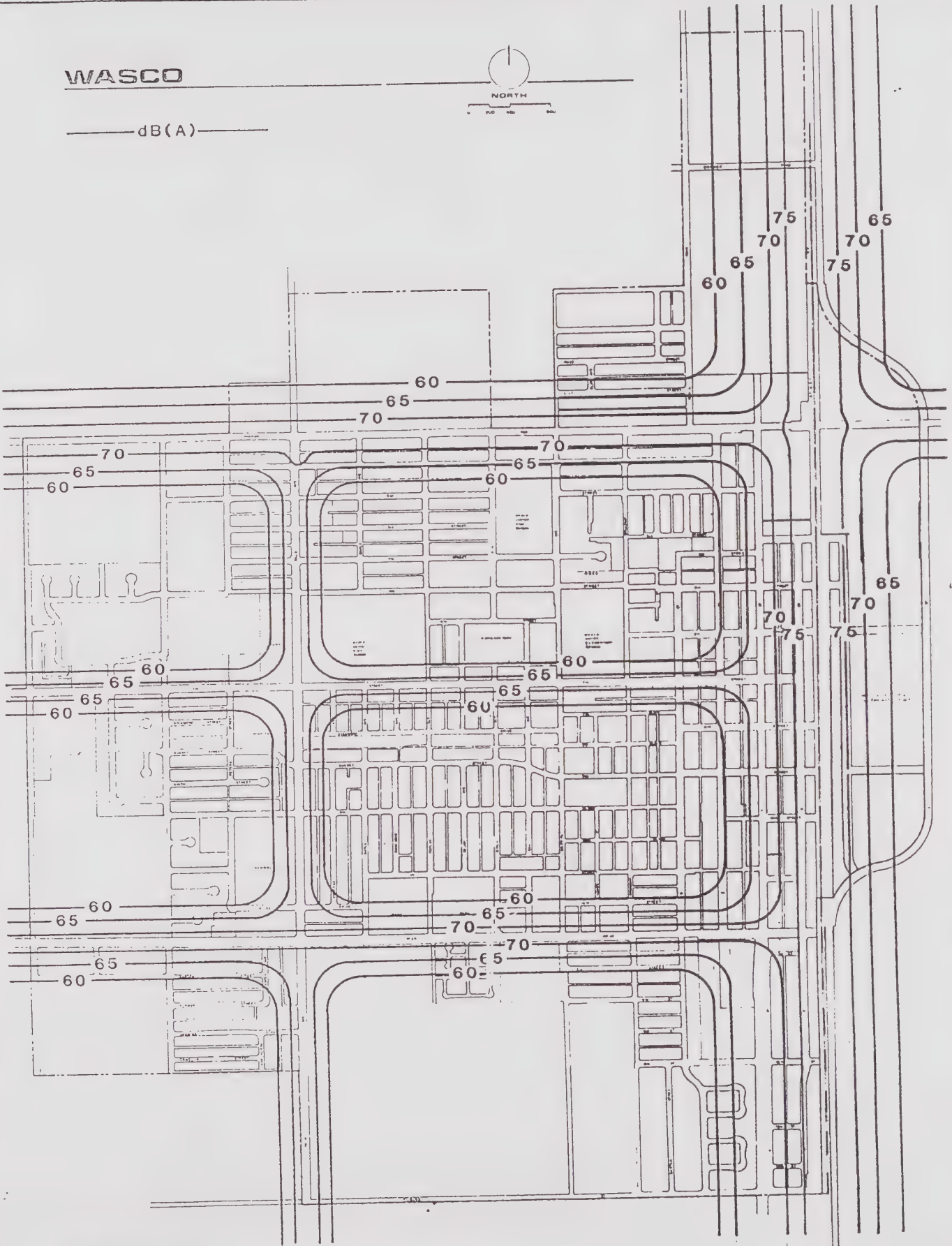


TABLE 3
City of Wasco
EXISTING AND FUTURE ESTIMATED NUMBER
OF PERSONS EXPOSED TO VARIOUS
NOISE LEVELS*

	<u>60 Ldn</u>	<u>65 Ldn</u>	<u>70 Ldn</u>	<u>Total</u>
1982	744	126	9	879
2000	1983	657	15	2655
Existing				
Structures	1135	293	15	1443
Existing				
Vacant Land**	848	364	--	1212

Source: QUAD Consultants, January 1982

*Based on 3.0 persons per dwelling unit

**Developed at five units per net acre

4.0 Policies and Standards

The following decision-making policies and standards shall be used to limit the exposure of persons and land uses to excessive levels of noise:

- In order to maintain an acceptable noise environment, the maximum acceptable noise levels for various land uses are established as shown on Table 3.
- Residential uses proposed for location in areas which have a measured or projected level of noise in excess of 65 dB(A), as determined by this Element, shall be required to include noise attenuation features which effectively reduce the level of interior ambient noise to a maximum of 45 dB(A). Mitigation measures may include such features as setbacks, berms, and barriers such as masonry walls subject to local zoning regulations.
- Noise attenuation features as described in Section 1092, Title 25 of the California Administrative Code, "Noise Insulation Standards," shall be used to determine appropriate residential structure noise insulation and isolation standards, where necessary.
- Designate truck routes as shown in Figure 5.
- Enforce California Vehicle Code standards relating to noise emissions (Sections 23130, 23130.5, 27150, 27151, 38365 and 38370.
- Regulate vehicle speeds.

TABLE 4

MAXIMUM ALLOWABLE AMBIENT NOISE EXPOSURE

<u>Land Use</u>	<u>Maximum Exterior Ldn</u>
Residential - Low Density	60
Residential - Multi-Family	65
Transient Lodging	65
Schools, Libraries, Churches, Hospitals, Resthomes	60
Auditoriums	60
Playgrounds, Parks	60
Commercial	70
Industrial	75

Source: QUAD Consultants, January, 1982.

State Office of Noise Control, 1976.

- Continue and improve the existing noise complaint reporting system.
- Locate sensitive land uses such as residences, hospitals, rest homes, or other such uses in areas which have an existing or projected level of noise less than 65 dB(A). If this is not feasible, such developments shall be conditioned to require noise mitigation measures to reduce the potential for adverse noise impacts.
- Cooperate with the County of Kern in implementing the Noise Element of Kern County, where possible.
- Review design of all proposed developments to assure incorporation of design techniques to minimize adverse noise impacts from the proposed development on surrounding land uses and to mitigate impacts that existing noise levels might have on the proposed development.
- Assure that land use and transportation planning include an analysis of potentially adverse noise levels associated with various design and use alternatives.
- The design of proposed transportation facilities should incorporate feasible measures necessary to mitigate increases in noise levels.
- Periodic review of this Element should be undertaken to ensure that adopted policies are responsive to changing conditions and technology.

SEISMIC SAFETY/SAFETY ELEMENT

1.0 Introduction

Although the Safety and Seismic Safety Elements of the General Plan have separate authorization under the Government Code, it is often beneficial to combine the two as a single document. The subject matter required by the General Plan Guidelines for each of the two elements significantly overlap, especially in the areas of seismic safety. Furthermore, safety-related policies of both elements are required to be comprehensive, internally consistent and coordinated with one another, a task which is easier to achieve if both documents are produced under the same cover.

The enabling legislation and purpose of each of the component elements are described below, followed by an analysis of the seismic and safety conditions and trends of the Wasco Planning Area, and policies relating to the control of conditions which portend to expose persons and property to unacceptable levels of risk.

1.1 Seismic Safety Element

The Seismic Safety Element is a required Element of a general plan, provided for by Section 65302(f) of the Government Code. The Code, at the minimum, requires an appraisal of the potential for surface rupture, ground shaking and ground

failure. The Element must also contain an assessment of the potential for general geologic hazards such as mudslides, landslides and slope/soil instability, or dam failure induced by a seismic event.

The purpose of the Seismic Safety Element is to reduce death, injuries, damage to property, and economic and social dislocation resulting from earthquakes and other geologic hazards. Its ultimate function is to establish planning and land use policies, specifically with regard to the location, type and density of development, and to reduce the potential for exposure of persons and property to geologic hazards.

Seismic phenomena are not limited to a small geographic area. Effects of fault displacement may, in fact, be felt hundreds or thousands of miles from the epicenter of a seismic disturbance, without significant reduction in intensity. Consequently, the seismic features of a given community are not generally unique from those of the surrounding areas.

In acknowledgement of the regional nature of seismic phenomena, the Seismic Safety Element enabling legislation provides for the adoption by a given city of all or a portion of its county's adopted Seismic Safety Element. It states in part that:

To the extent that a county's seismic safety element is sufficiently detailed containing appropriate policies and programs for adoption by a city, a city may adopt that portion of the

county's seismic safety element that pertains to the city planning area within the county's jurisdiction, in satisfaction of this subdivision. (Section 65302(f), Government Code.)

This statute permits the City to adopt all or part of the County Element by resolution, rather than replicating technical studies contained in the County Element.

Portions of the Kern County Seismic Safety Element's findings and policies relating to the Wasco Planning Area have been included herein, where appropriate and applicable.

1.2 Safety Element

The Safety Element is a required Element of a general plan and is provided for in Section 65302(i) of the California Government Code. The law provides that the Safety Element shall be prepared for the purpose of protecting persons and property

from fires and geologic hazards including features necessary for such protection such as evacuation routes, peak load water supply requirements, minimum road widths, clearances around structures and geologic hazards mapping in areas of known geological hazards.

Pertinent issues relating to the Safety Element are also contained in other elements of the general plan, such as the Conservation Element. However, the nature of the Safety Element's goals and policies are problematic, relating to specific programs and standards to be used to preserve public safety.

The General Plan Guidelines prepared by the Governor's Office of Planning and Research (OPR) specify the scope of the Safety Element. They indicate that while the statutory requirement for the Safety Element focuses primarily on fires in wildland areas adjacent to urban developments, and on geologic hazards, the Element should also address urban structural fires, location and siting of hazardous materials, general emergency procedures and planning methods to reduce the incidence of crime. Consequently, the safety portion of the combined Element will cover an analysis of wildlife and structural fires; threats to life and property resulting from flood inundation; and other hazards such as crime or other man-made phenomena.

2.0 Goals

The goal of the individual and combined elements is as follows:

- To reduce injuries, death, damage to property, social and economic dislocation resulting from fires, geologic hazards and other man-made or natural hazards to an acceptable level of risk.

3.0 Conditions and Trends

3.1 Safety Hazards

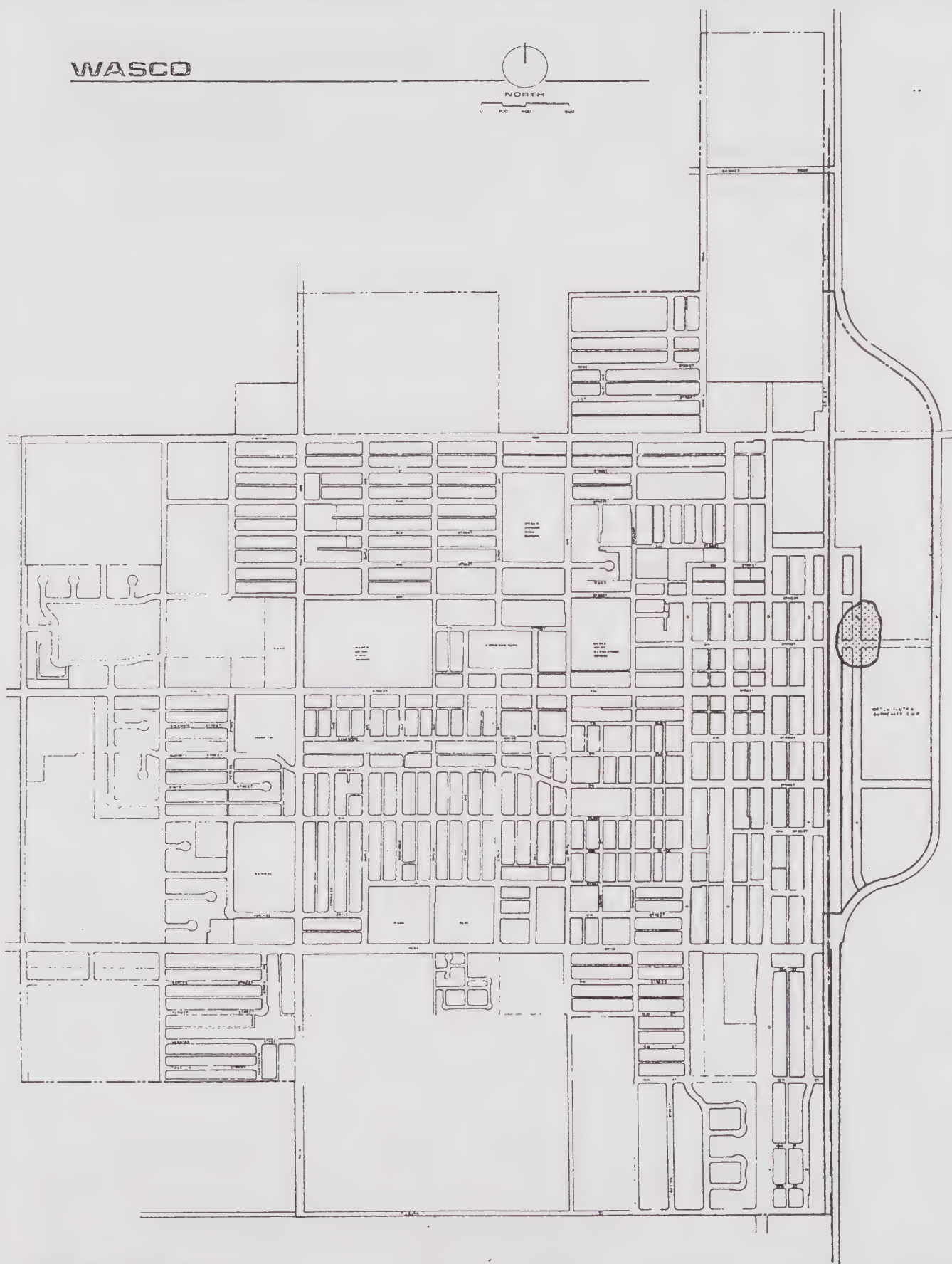
Fire. Fire protection services are provided by the Kern County Fire Department. The Fire Department has determined that, due to the lack of substantial fuel loadings (combustible

vegetation), the Wasco Planning Area is not contained within the County's designated hazardous fire area.

Structure fires, as reported by the Kern County Fire Department, primarily occur in residential structures. All properties within the Planning Area are within a two-mile, two-minute response time radius from the County fire station located at the northwest corner of 8th and "F" Streets. A new battallion station serving northern Kern County is under construction. The new station will be located on the north side of 7th Street between the Peters Street alignment and Beckes Street. This station will be completed and operational in 1983. The Pacific Fire Rating Bureau has given Wasco a fire insurance rating of "five," indicating a relatively low probability for large fires or conflagrations.

Flood. Due to its relative isolation from major streams or rivers, the land within the Wasco Planning Area is not subject to flood waters resulting from a 100-year flood. Some localized ponding and runoff does occur, however, in the locations shown on Figure 13. In 1975, the Kern County Water Agency conducted a flood hazard study and concluded that Wasco is not in an area subject to flooding.

Hazardous Material. The location of various types of hazardous material is shown on Figure 14. The most prominent material is petroleum storage tanks located between "F" and "G" Streets from Poso Avenue to Highway 46. This use is currently operating under a use permit and is controlled by special City ordinances and conditions of approval.

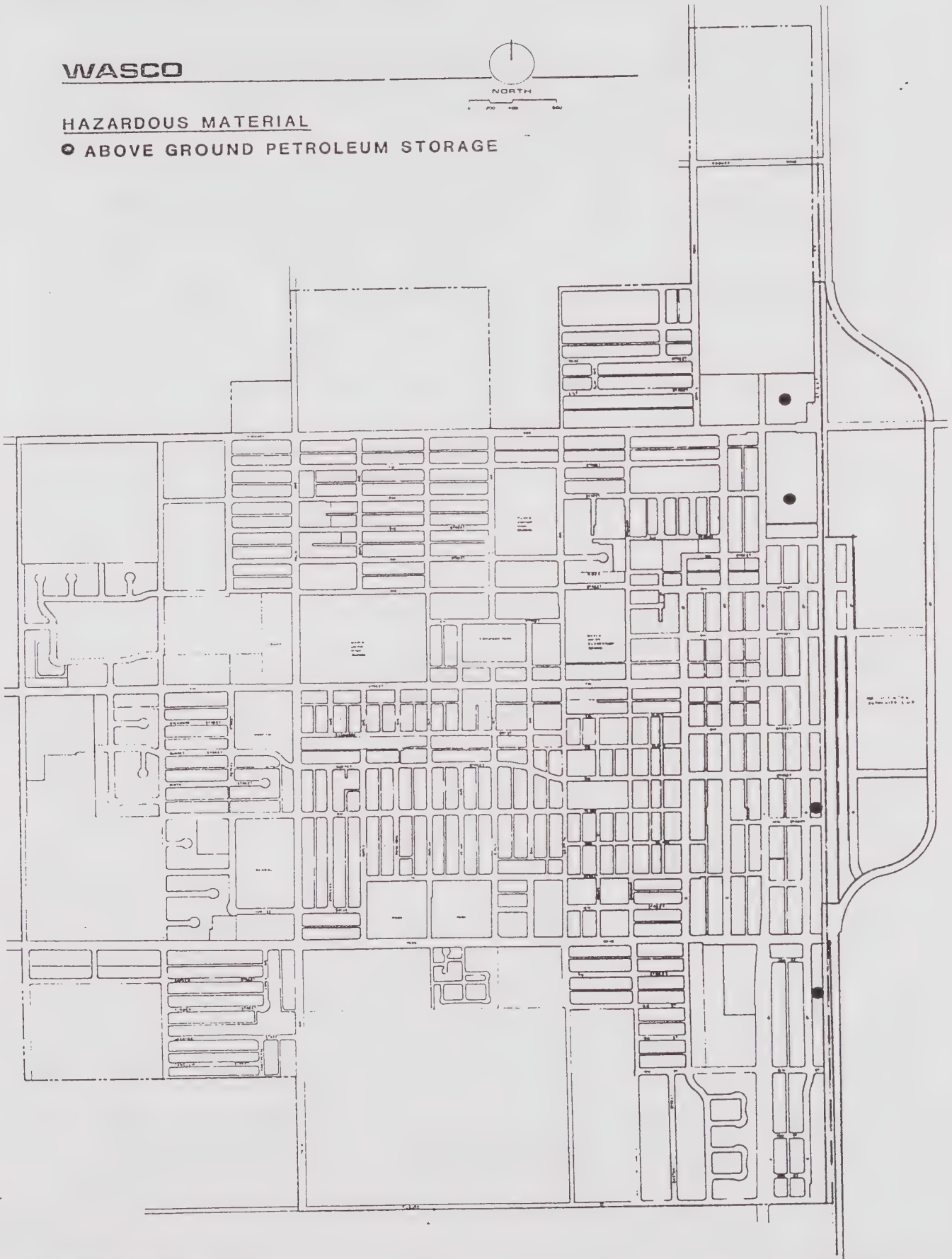


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HAZARDOUS MATERIAL

● ABOVE GROUND PETROLEUM STORAGE



The ATS&F railroad and the State highways in the Planning Area carry material considered to be hazardous, if not handled properly. Shipments on these transportation facilities are regulated by State and Federal governments for intra-state and inter-state shipments, respectively.

Crime. The City is responsible for providing police services to persons and property within the incorporated limits of Wasco. The Kern County Sheriff's Department, however, is under contract to the City to provide such services. One agency, the County, therefore, is responsible for police services in the entire Planning Area.

Several factors germane to the general plan, including urban design and land use policies, may effect crime prevention, or at least reduce the occurrence of conditions under which criminal behavior may be undertaken. The first factor is the nature of resident's surveillance and patrol of their neighborhood--their "defensible space." The second factor is the visibility or visual penetration available to officers when on patrol.

Defensible space is a sociological phenomena whereby a resident defines--"stakes out"--his "territory" within which he is willing and able to exercise a proprietary attitude and behavior, including active patrol and protection. An individual's concept of his "neighborhood" would be equivalent to his "defensible space." Key ingredients in the

establishment of individuals' defensible space include the ability of residents to visually survey public areas of the environment, location of high intensity public or quasi-public facilities, lighting and the amount of through traffic.

The visual penetration available to patrol officers is affected by lighting and line-of-sight obstructions. Increasing lighting and/or decreasing line-of-sight obstructions increase the officers' efficiency level and correspondingly affords a greater degree of crime prevention.

Due to the low-level, single-story nature of development in the City, there are no substantial or permanent restrictions on using such techniques for crime prevention.

3.2 Seismic Safety Hazards

Seismic History. The City of Wasco, being located in Kern County, is in one of the most seismically active regions of California. However, within the immediate vicinity of Wasco there is only one active earthquake fault, the Pond-Poso Fault. It should be noted that the Environmental Impact Report for the proposed (formerly) nuclear power plant near Wasco considered the Wasco area as one of the safest in the Central Valley.

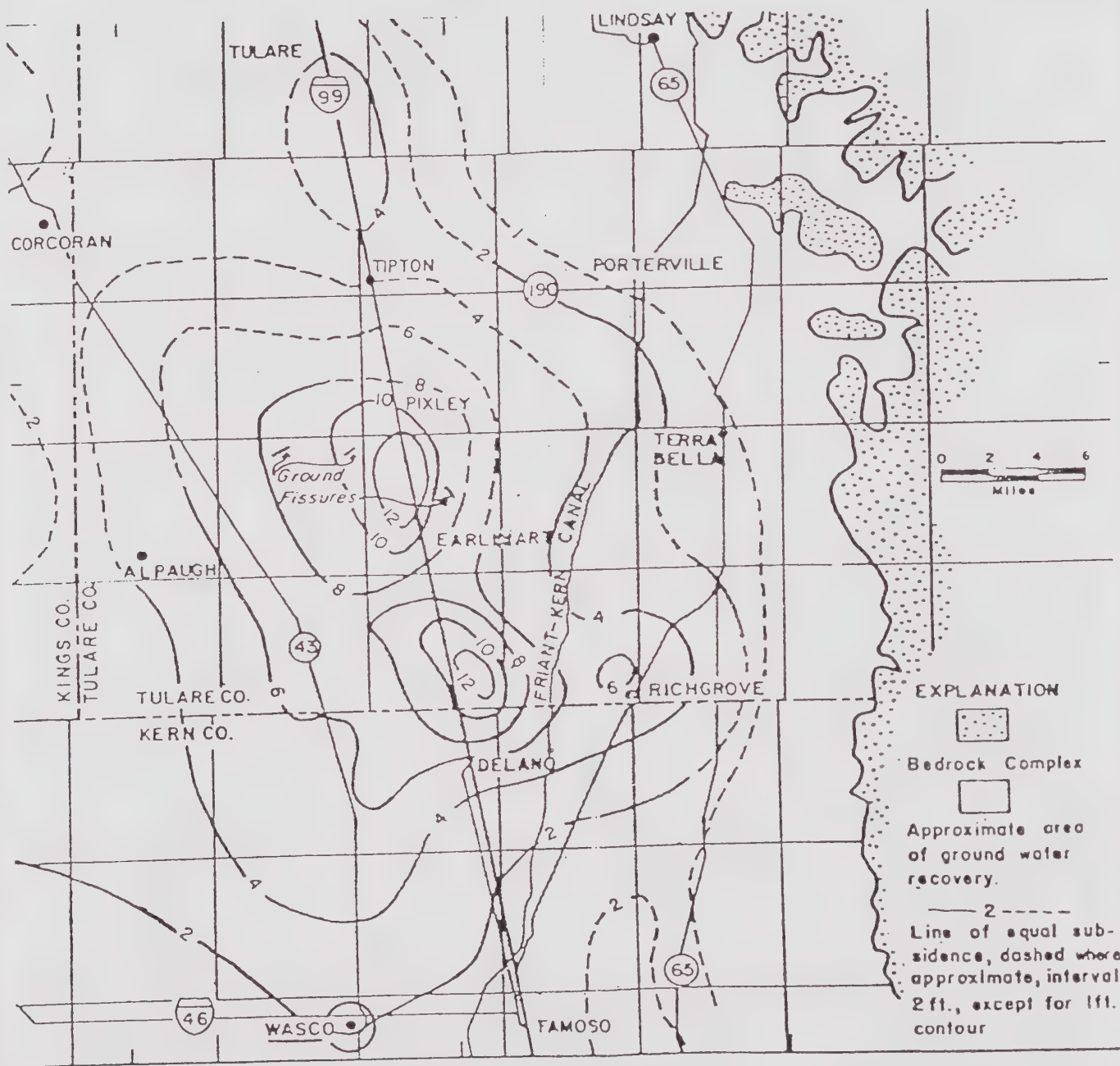
Ground Shaking. The probable intensity of ground shaking resulting from the occurrence of a major earthquake is related to the intensity of the seismic event and the local geologic conditions. In areas with unstable soils or fragile strata, the ground shaking may be equal to or greater than that

experienced near the quake's epicenter. The California Division of Mines and Geology has mapped the likely intensity of ground shaking in various areas of California by assigning a Modified Mercalli Rating to geographic areas in the state. The Wasco Planning Area is contained within an area which has a rating of between VII and VIII, indicating potential for some damage to plaster or masonry structures during the occurrence of a major seismic event.

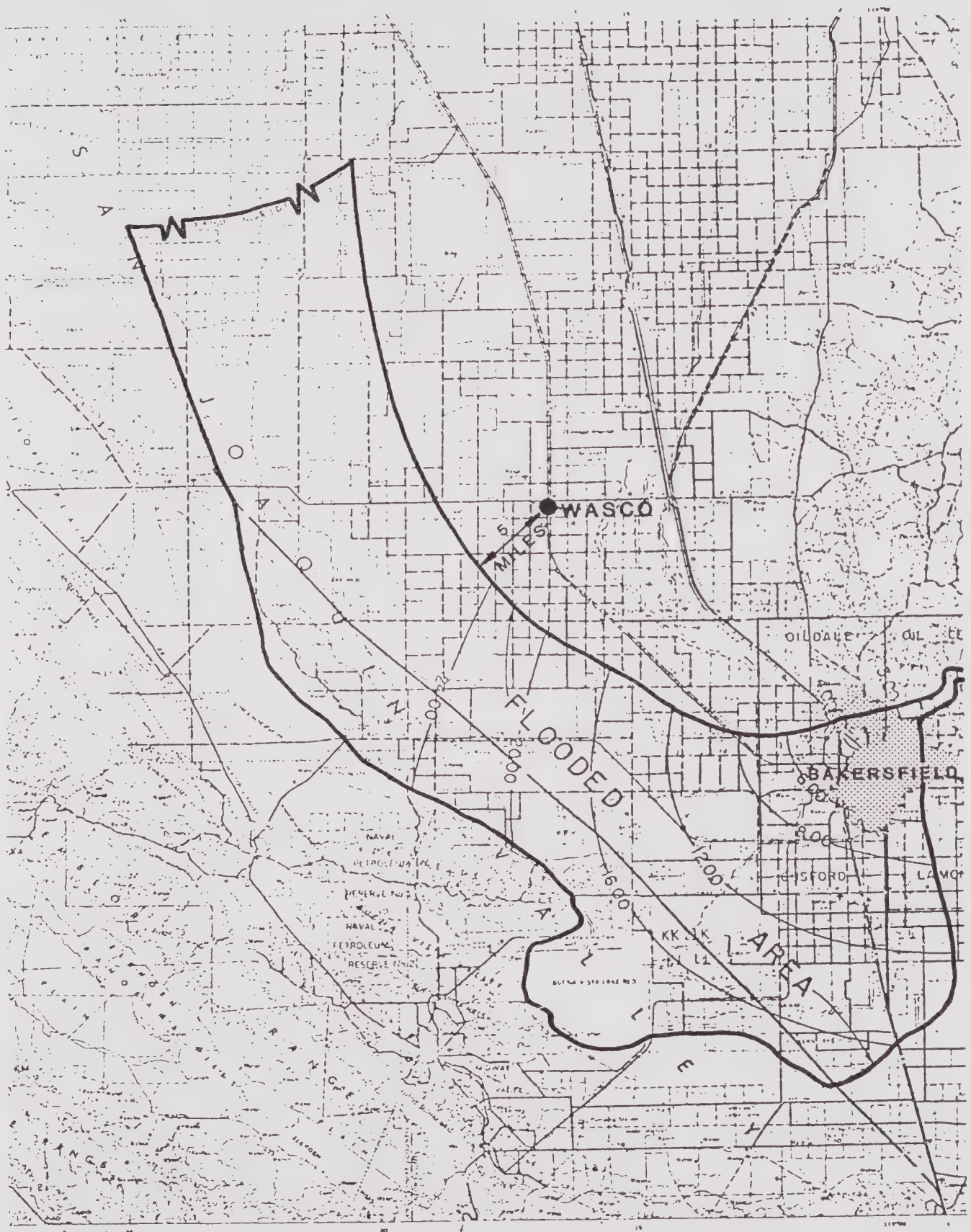
Ground Failure. The Planning Area is not subject to ground failures such as landslides or other such natural phenomena. The community is, however, on the fringe of the area known as the Tulare-Wasco land subsidence area. Land subsidence of this type is a phenomenon described as "deep subsidence" and is due to the extraction of ground water in excess of net natural recharge. As shown on Figure 3, Wasco has not yet been significantly affected by this phenomenon.

According to the Safety and Seismic Safety Element of the Kern County General Plan, there are no expansive clay soils, perched water tables or shallow water tables that would contribute to unstable soil conditions in the Wasco Planning Area.

Dam Failure. Figure 4 illustrates the depth and distribution of flood waters resulting from the failure of the Isabella Reservoir Dam, as estimated by the Army Corps of Engineers. It shows general inundation on the western portion of Kern County but does not specifically include the Wasco planning area.



LAND SUBSIDENCE BETWEEN YEARS 1926 - 1970



NORTH

1" : 8 Miles

QUAD
CONSULTANTS
VISALIA-BAKERSFIELD

TITLE

INUNDATION DUE TO DAM FAILURE

FIGURE

17

3.3 Hazard Potential and Risk

The State guidelines for preparation of the Safety and Seismic Safety Elements of the General Plan require that the Elements determine the "level and nature of acceptable risk" to which persons and property should be exposed. The Element must, therefore, consider the degree of protection the citizens wish their governments to provide. Its purpose is, therefore, to provide the City with a decision-making tool and to establish minimum thresholds for implementation of special, governmentally mandated safety measures.

Governmental intervention for the purpose of mitigating hazardous conditions may be justified on the basis of cost-minimizing measures which only a municipal corporation may undertake, protection from risks which are not under the control of the private sector, or protection from risk to which members of the community would not voluntarily expose themselves.

Acceptable Risk. For the purpose of assessing the appropriate level of acceptable risk to which various land use types and occupancies may be exposed, five classes of structure and occupancies are established. The ratings may be used to objectively assess the appropriateness of a given land use in alternative locations based on the level of acceptable damage to such structures and land uses in the event of a Richter magnitude 8.3 seismic event within 50 miles.

Risk Class 1 - Highly Critical Structures and Occupancies - Very Low Risk Tolerance - Structures whose continued functioning is critical, or whose failure might be catastrophic: nuclear reactors, large dams, power inertia systems, plants manufacturing or storing explosives or toxic materials.

Acceptable Damage: None which would expose large population to death or serious injury or impair the safety of the facility or disrupt its function.

Risk Class 2 - Structures Critically Needed After Disaster - Low Risk Tolerance - Structures whose use is critically needed after a disaster: important utility centers; hospitals; fire, police, and emergency communication facilities; fire stations; and critical transportation elements such as bridges and overpasses; also smaller dams.

Acceptable Damage: Minor non-structural; facility should remain operational and safe, or be susceptible to quick restoration of service.

Risk Class 3 - High Occupancy Structures - Low Risk Tolerance - Structures of high occupancy, or whose use after a disaster would be particularly convenient; schools, churches, theaters, large hotels, and other high-rise buildings housing large

numbers of people; other places normally attracting large concentrations of people; civic buildings such as fire stations, secondary utility structures; extremely large commercial enterprises; and most roads, alternative or noncritical bridges and overpasses.

Acceptable Damage: No structural damage which would materially impair safety; structures should remain usable; some impairment of function acceptable.

Risk Class 4 - Ordinary Risk Tolerance - The vast majority of structures in urban areas: most commercial and industrial buildings, small hotels, and apartment buildings, and single-family residences.

Acceptable Damage: The vast majority of structures consist of commercial and industrial buildings, small hotels and apartment buildings, and single family residences, for which an "ordinary" degree of risk should be acceptable. The criteria envisioned by the Structural Engineers Association of California provide the best definition of the "ordinary" level of acceptable risk. These criteria require that buildings should be able to:

- a. Resist minor earthquakes without damage;
- b. Resist moderate earthquakes without structural damage, but with some non-structural damage;
- c. Resist major earthquakes, of the intensity or severity of the strongest experienced in California, without collapse, but with some structural as well as nonstructural damage.

Risk Class 5 - Moderate to High Risk Tolerance - Open space uses, such as farms, ranches, and parks without high occupancy structures; warehouses with low intensity employment storing non-hazardous materials.

Acceptable Damage: Not applicable.

4.0

Policies

4.1 General Policies

- Uses of land should be controlled to avoid exposure to risk in excess of the level generally acceptable to the community.
- Critical facilities, such as major transportation links, communications and utility lines, and emergency shelter facilities, should be located, designed and operated in a manner which maximizes their ability to remain functional after a great earthquake.

- Accepted engineering and building standards for structural design and other building components shall be applied to achieve safety consistent with acceptable levels of risk.
- Existing structures and facilities should be evaluated to identify structural conditions which would present excessive risk in the event of a major earthquake.
- The public should be made aware of hazards and measures which can be taken to protect their lives and property.
- Soils reports and geologic investigations shall be required in all instances in which available information indicates there is a substantial threat to life or property on any site.
- The location and extent of areas subject to soil and geologic investigations received by the jurisdiction shall be recorded and the reports thereon shall be considered to be public records. Where appropriate, the results of such detailed investigations will be utilized to supplement and supersede more general information.

4.2 Seismic Safety

4.2.1 Policies Relating to Specific Standards

Ground Shaking. In order to limit damage to acceptable risk levels, the following design and construction guidelines are established. In all cases "earthquake" refers to the closest probable earthquake of Richter magnitude 8.3.

- o All structures shall be designed and constructed to:
 - a. Resist a minor earthquake from the closest potentially active fault without damage.
 - b. Resist a moderate earthquake without structural damage, but with some non-structural damage allowable.
 - c. Resist a major earthquake of the intensity or severity of the strongest experienced in California without collapse, but with some structural as well as non-structural damage allowable.
- o Structures and occupancies in Risk Classes 1, 2, and 3 shall be designed and constructed to prevent damage from ground shaking in excess of the acceptable level identified with the relevant Risk Class.
- o Dynamic ground motion analysis and responsive structural design should be required for all new major structures in Risk Classes 1, 2, and 3.

4.2.2 Land Use Planning Guidelines

Seismic and other geologic hazards should be given major consideration in land use planning. Although many

factors are involved in determining the appropriateness of a use for any site or land area, the following principles are adopted:

- Land use decisions should be based on realistic evaluations of land capability with appropriate weight being given to seismic conditions and other relevant physical characteristics.

4.2.3 Guidelines for Land Use Regulation

Implementation of policies to reduce seismic risk should be addressed in zoning, subdivision, site development regulations and the Building Code. The following general guidelines apply to all of these regulations:

- A means should be provided by which the data upon which the policies in this Element were derived will be updated or superseded as more accurate or more specific data become available.
- In formulating regulations, particular care should be exercised to recognize the level of generality of the data on which this Element is based. For specific land developments requiring more detailed analysis prior to making a decisive finding as to potential impacts, a geologic investigation should be prepared according to guidelines promulgated by the California Division of Mines and Geology.

- o Setback requirements for critical facilities and structures for human occupancy shall consider potential seismic or geologic hazards.
- o Unstable uses with moderate to high lateral movement hazard shall be subject to increased setbacks from identified hazards unless detailed information demonstrates conclusively that standards of acceptable risk can be met on a particular site with standard setbacks.
- o Routine investigation of geotechnical problems should be required for all tentative subdivision maps. Where problems of a serious nature are identified in routine investigations, detailed investigations should be required at a stage in the subdivision approval process appropriate to the degree of impact on the feasibility of the subdivision or its layout.
- o To minimize the effect on structures and persons residing in the Planning Area, the following related Uniform Building Code (UBC) sections shall apply:
 - a. Chapter 70 of the 1979 Uniform Building Code relating to excavation and grading and general site improvements or any similar Chapter of the UBC subsequently adopted;
 - b. Chapter 23 of the 1979 Uniform Building Code relating to minimum lateral stress requirements (earthquake protection) or any similar Chapter of the UBC subsequently adopted.

4.3 Safety

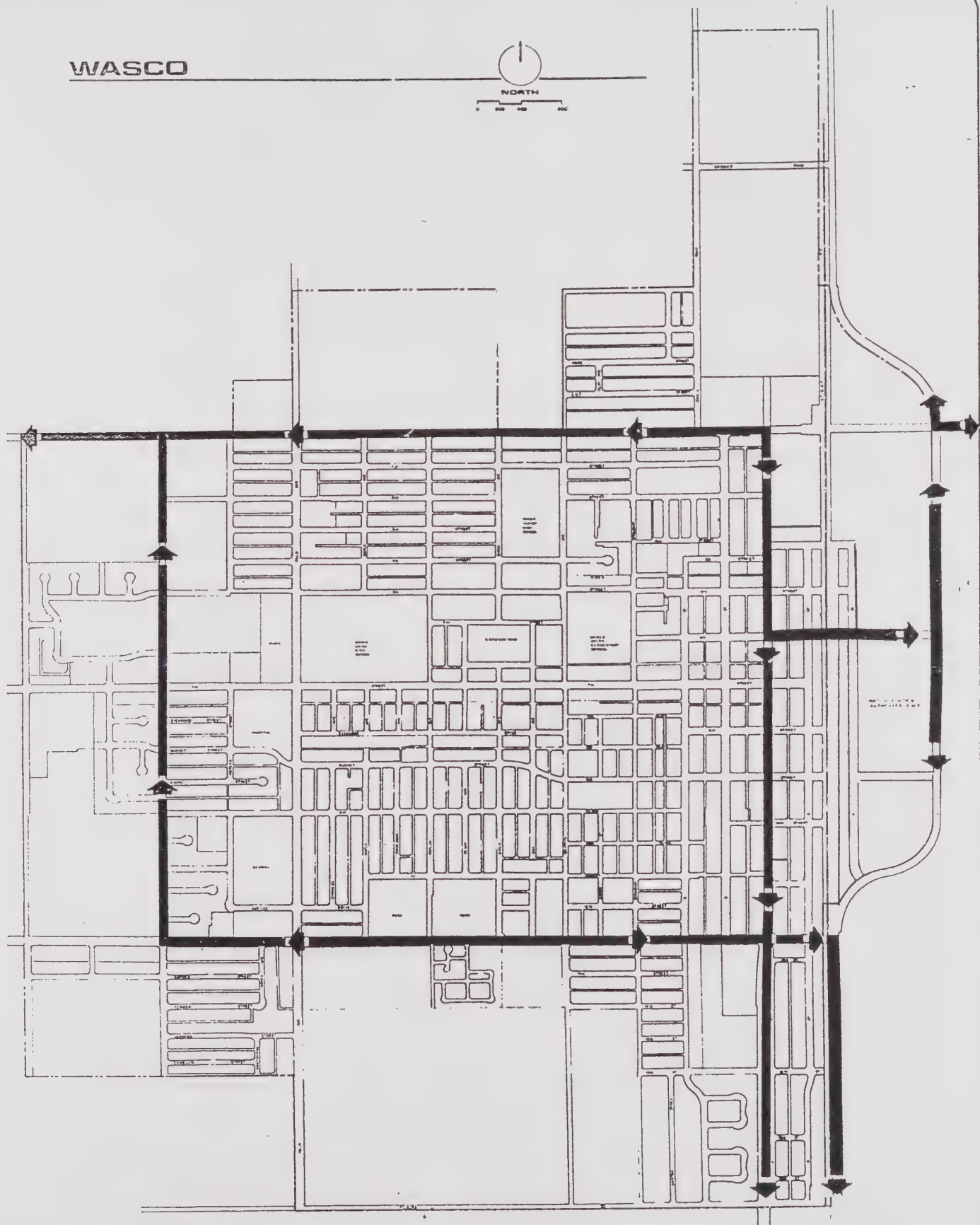
4.3.1 General

- o All development applications shall be reviewed by a representative of the appropriate City departments to determine compliance with standard ordinances, codes, regulations, and to determine opportunities for including techniques appropriate to implement policies contained in this Element. Such review shall be incorporated into the City's current design review process.
- o Evacuation routes as shown on Figure 17 shall be established.

4.3.2 Policies Relating to Specific Hazards Fire:

- o All structures shall be easily and immediately accessible by police, fire and other public safety vehicles and apparatus;
- o Land uses which handle, process or manufacture highly flammable materials shall be separated from other land uses;
- o The County Fire Marshal shall establish minimum fire flow requirements for various building types and land uses;

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- The Uniform Fire Code and Uniform Building Code shall be adopted and enforced.

Flooding

- Land subject to flooding shall be designated for non-urban uses if such flooding is not mitigatable.
- Establish the evacuation routes shown in Figure 18 in the event of floods.

Crime

- "Defensible space" shall be maximized through cluster developments and other urban design techniques, where possible.
- Visibility and visual penetration shall be maximized.

Hazardous Materials

- Existing truck routes shall be maintained. No new routes shall be allowed. This will minimize the potential for exposure of persons to dangerous chemicals.
- Uses which process, manufacture or handle potentially hazardous materials shall be located in industrial areas of the community.
- Uses which process, manufacture or handle potentially hazardous material shall be subject to the Conditional Use Permit process.

SCENIC HIGHWAYS ELEMENT

There are no State, County or local scenic highways in Wasco.

U.C. BERKELEY LIBRARIES



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